

WHAT IS CLAIMED IS:

1. A propagation delay time measuring method of measuring a propagation delay time of a test signal propagating along one of a first signal path and a second signal path serially connecting to the first signal path through which a semiconductor testing apparatus includes a driver and a comparator electrically connected to a device under test, the method comprising steps of;

a first connecting step of connecting an end of the first path to the driver and the comparator;

a first output step of outputting a test signal from the driver to the first path;

a first reflect signal receiving step of receiving a test signal at the comparator, defined as a first reflect signal, reflected at another end of the first path;

a first timing detecting step of detecting a timing, defined as a first timing, when the first reflect signal obtained by the comparator reaches a predetermined level;

a second connecting step of connecting an end of the second path to another end of the first path;

a second output step of outputting the test signal from the driver to the second path;

a second reflect signal receiving step of receiving a test signal at the comparator, defined as a second reflect signal, reflected at another end of the second path;

a second timing detecting step of detecting a timing, defined as a second timing, when the second reflect signal obtained by the comparator reaches the predetermined level; and

a delay time calculation step of calculating of the propagation delay time of the second path, based on the reference

timing corresponding to a timing when the delay time calculator outputs the test signal, the first timing, and the second timing.

2. A propagation delay time measuring method as claimed in claim 1, wherein the first connecting step includes a first grounding step of grounding another end of first path and the second connecting step includes a second grounding step of grounding another end of the second path.

3. A propagation delay time measuring method as claimed in claim 1, wherein the first timing detecting step includes a step of detecting the first timing when a rise edge of the first reflect signal reaches the predetermined level and the second timing detecting step includes a step of detecting the second timing when a rise edge of the second reflect signal reaches the predetermined level.

4. A propagation delay time measuring method as claimed in claim 1, wherein the first timing detecting step includes a step of detecting the first timing when a fall edge of the first reflect signal reaches the predetermined level and the second timing detecting step includes a step of detecting the second timing when a fall edge of the second reflect signal reaches the predetermined level.

5. A propagation delay time measuring method as claimed in claim 1, wherein the reference timing is defined as a timing when the driver outputs the test signal and the delay time calculation step includes; a step of calculating the propagation delay time, based on a first timing interval which is defined as a interval from the reference timing to the first timing,

and a second timing interval which is defined as a interval from the reference timing to the second timing.

6. A propagation delay time measuring method as claimed in claim 5, further comprising:

a repetition step of repeatedly repeating the first output step, the first reflect signal output step, and a step of supplying the test signal to the driver from the comparator, based on a signal output of the comparator corresponding to the obtained first reflect signal and

the delay time calculation step further includes a step of calculating the first timing interval based on a repeating period of the repetition step.

7. A propagation delay time measuring method as claimed in claim 5, further comprising:

an another repetition step of repeatedly repeating the second output step, the second reflect signal output step, and a step of supplying the test signal to the driver from the comparator, based on a signal output of the comparator corresponding to the obtained second reflect signal; and

the delay time calculation step further includes a step of calculating the second timing interval based on a repeating period of another repetition step.

8. A semiconductor testing apparatus for supplying a test signal to semiconductor devices so as to test the semiconductor devices, the apparatus comprising:

a driver which outputs the test signal;

a comparator which receives the test signal;

a first path of which an end is connected with the driver

and the comparator;

a second path an end of which is connected to another end of the first path and of which another end is connected to a device under test; and

a delay time calculator which calculate a propagation delay time of the second path, based on a timing, defined as a first reflect signal which is output from the driver and reflected at the end of another end of the first path, when the first reflect signal reaches a predetermined level, and based on a timing, defined as a first reflect signal which is output from the driver and reflected at the end of another end of the second path, when the second reflect signal reaches a predetermined level.